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# Anal Cancer Causes, Risk Factors, and Prevention

Learn about the risk factors for anal cancer and what you might be able to do to help lower your risk.

## Risk Factors

A risk factor is anything that increases your chance of getting a disease such as cancer. Learn more about the risk factors for anal cancer.

- [Risk Factors for Anal Cancer](#)
- [What Causes Anal Cancer?](#)

## Prevention

There is no way to completely prevent anal cancer. But there are things you can do that might lower your risk. Learn more.

- [Can Anal Cancer Be Prevented?](#)

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# Risk Factors for Anal Cancer

- [HPV \(human papillomavirus\) infection](#)
- [Anal warts](#)





Smoking increases the risk of anal cancer. The higher a person's pack-year history of smoking, the higher their risk of developing anal cancer. People who currently smoke are more likely to have cancer of the anus compared with people who do not smoke or have quit smoking. [Quitting smoking](#)<sup>7</sup> seems to reduce the risk.

## Lowered immunity

Higher rates of anal cancer occur among people with reduced immunity, such as people with AIDS or people who have had an organ transplant and must take medicines that suppress their immune system.

## Sex and race/ethnicity

Anal cancer is more common in White women and Black men.

## Hyperlinks

1. [www.cancer.org/cancer/types/cervical-cancer.html](http://www.cancer.org/cancer/types/cervical-cancer.html)
2. [www.cancer.org/cancer/risk-prevention/hpv/hpv-and-cancer-info.html](http://www.cancer.org/cancer/risk-prevention/hpv/hpv-and-cancer-info.html)
3. [www.cancer.org/cancer/risk-prevention/hpv/hpv-vaccine.html](http://www.cancer.org/cancer/risk-prevention/hpv/hpv-vaccine.html)
4. [www.cancer.org/cancer/types/vaginal-cancer.html](http://www.cancer.org/cancer/types/vaginal-cancer.html)
5. [www.cancer.org/cancer/types/vulvar-cancer.html](http://www.cancer.org/cancer/types/vulvar-cancer.html)
6. [www.cancer.org/cancer/risk-prevention/infections/hiv-infection-aids.html](http://www.cancer.org/cancer/risk-prevention/infections/hiv-infection-aids.html)
7. [www.cancer.org/cancer/risk-prevention/tobacco/guide-quitting-smoking.html](http://www.cancer.org/cancer/risk-prevention/tobacco/guide-quitting-smoking.html)

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Machalek DA, Poynten M, Jin F, et al. Anal human papillomavirus infection and associated neoplastic lesions in men who have sex with men: A systematic review and meta-analysis. *Lancet Oncol*. 2012;13:487-500.

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## What Causes Anal Cancer?

some people with anal cancers do not have any known risk factors and the causes of their cancers are also unknown.

## HPV infection

Most anal cancers seem to be linked to infection with HPV (the [human papillomavirus](#)<sup>1</sup>). While HPV infection seems to be important in the development of anal cancer, the vast majority of people with HPV infections *do not* get anal cancer.

A great deal of research is now being done to learn how HPV might cause anal cancer. There is good evidence that HPV causes many anal squamous cell carcinomas. But the role of this virus in causing anal adenocarcinomas is less certain.

More than 150 subtypes of HPV have been found. The subtype known as HPV-16 is often found in squamous cell carcinoma and is also found in some anal warts. Another subtype, HPV-18, is found less often. Most anal warts are caused by HPV-6 and HPV-11. Warts containing HPV-6 or HPV-11 are much less likely to become cancer than those containing HPV-16.

HPV makes proteins (E6 and E7) that can shut down 2 important tumor suppressor proteins in normal cells. These proteins – p53 and Rb – normally work to keep cells from growing out of control. When these proteins are not active, cells are more likely to become cancer.

## Lowered immunity

When the body is less able to fight off infections, viruses like HPV can become more active, which might trigger the development of anal cancer. HIV, the virus that causes AIDS, weakens the body's immune system, as can medicines used to prevent rejection in patients with organ transplants.

## Smoking

Most people know that [smoking](#)<sup>2</sup> is the main cause of lung cancer. But the cancer-causing chemicals in tobacco smoke can travel from the lungs to the rest of the body, causing other types of cancer as well. Smoking also seems to make the immune system less effective in fighting HPV infections. Many studies have noted an increased rate of anal cancer in people who smoke, and the effect of smoking is especially important in people with other risk factors for anal cancer.











